

Children in the Digital Age

Clifford W. Bogue, MD

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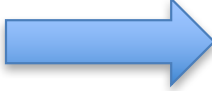
Outline

- What is the current landscape?
 - Young children
 - Older children and teens
- Potential benefits and opportunities of media use
- Health and developmental risks
- What's a parent to do?

Current Landscape – Young Children (0-8 yrs)

- Children and adolescents are immersed in a digital environment
- Traditional media (broadcast media) vs newer digital media
 - Content created by external entity for passive viewing vs
 - Content created and consumed by individuals
- Digital media use
 - 1970: children watched TV regularly by 4 yrs
 - Today: children begin interacting with digital media by 4 months
 - TV viewing has slowly decreased over past 2 decades
 - But majority of parents still report > 2 hrs TV/day

Current Landscape – Young Children (0-8 yrs)

- Decrease TV viewing  increased mobile device access
 - 2011: 52% of 0-8 yr olds had access
 - 2013: 75% had access
 - Most parents report use for entertainment rather than education
 - Disparity based on income exists

Current Landscape – Young Children (0-8 yrs)

Average time spent using screen media by children at home per day, by age				
	Among All	Younger than 2 y	2–5 y	6–8 y
TV or DVDs	1:46	0:59	2:01	1:52
Computer	0:25	0:09	0:20	0:42
Video game player (console)	0:18	-	0:14	0:31
Tablet computer	0:14	0:02	0:16	0:17
Handheld video game player	0:11	0:01	0:10	0:18
Smartphone	0:10	0:03	0:13	0:11
Total	3:04	1:15	3:13	3:52

Wartella et al, 2014

Yale SCHOOL OF MEDICINE

Yale
NewHaven
Health
Yale New Haven
Children's Hospital

Current Landscape – Young Children (0-8 yrs)

Use of individual screen media among media-centric, media-moderate, and media-light parents of 0 to 8 year olds

	Media-Light Parents	Media-Moderate Parents	Media-Centric Parents
TV or DVDs	0:54	2:12	4:19
Computer	0:34	1:26	3:35
Video games	0:03	0:12	0:36
iPad, iPod touch, or similar device	0:07	0:19	0:36
Smartphone	0:10	0:34	1:57
Total screen media use	1:48	4:42	11:03

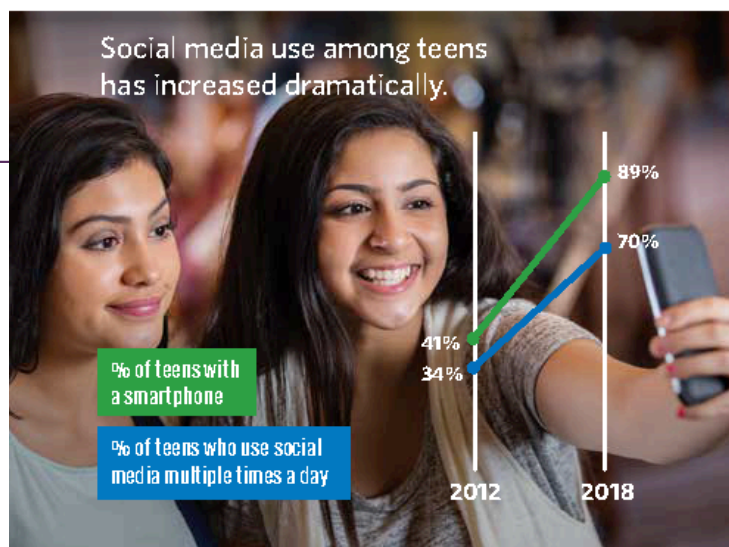
Wartella et al, 2014

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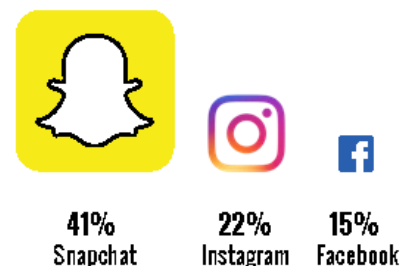
Social Media, Social Life 2018

Among 13- to 17-year-olds
in the United States

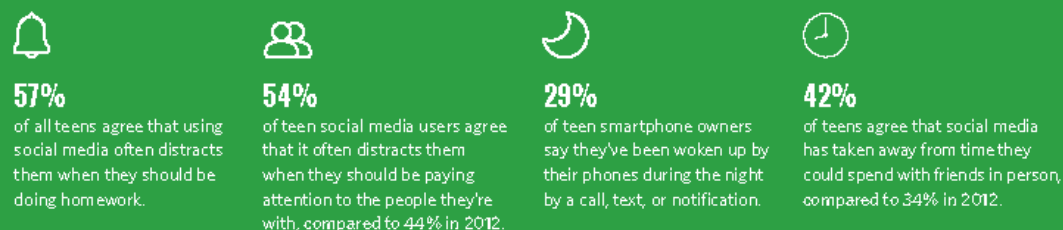


Teens overwhelmingly choose Snapchat as their main social media site.

Percent of teens who say they use each social media site the most:

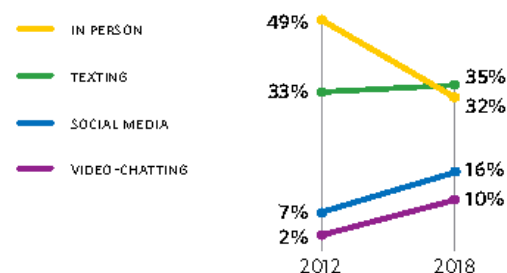


They're being distracted from other important things and their friends.



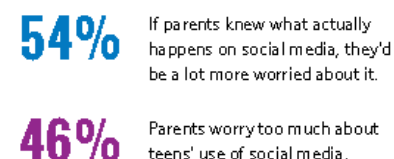
Teens don't value face-to-face communication with friends as much as they used to.

Teens favorite way of communicating, 2012 vs. 2018



What happens online stays online.

When asked to pick which comes closer to the truth, teens say:



Current Landscape – Older Children/Teens

- 4 out of 5 households own a device used to play video games
- 50% own a dedicated game console
- Media multitasking – engaging in >1 form of media at a time
 - 50% of time with older adolescents
- Mobile and social media have changed the ability of advertisers to reach children and teenagers
 - Major alcohol brands maintain strong presence on social media
 - Advertising is targeted and interactive
 - Effects on children and adolescents not known

Potential Benefits/Opportunities

- Before 2 yrs, limited or no benefit
 - “Video deficit” – difficulty learning from 2-dimensional video representations
 - Personal interactions with caregiver essential
- 3-5 yrs: high quality educational programs (PBS, Sesame Street, Mr. Rogers) demonstrably improve:
 - Cognitive function
 - Linguistic ability
 - Social outcomes
 - Can teach important child health and developmental needs (obesity, resilience)
 - Most effective if parent/caregiver socially interacts and reinforces

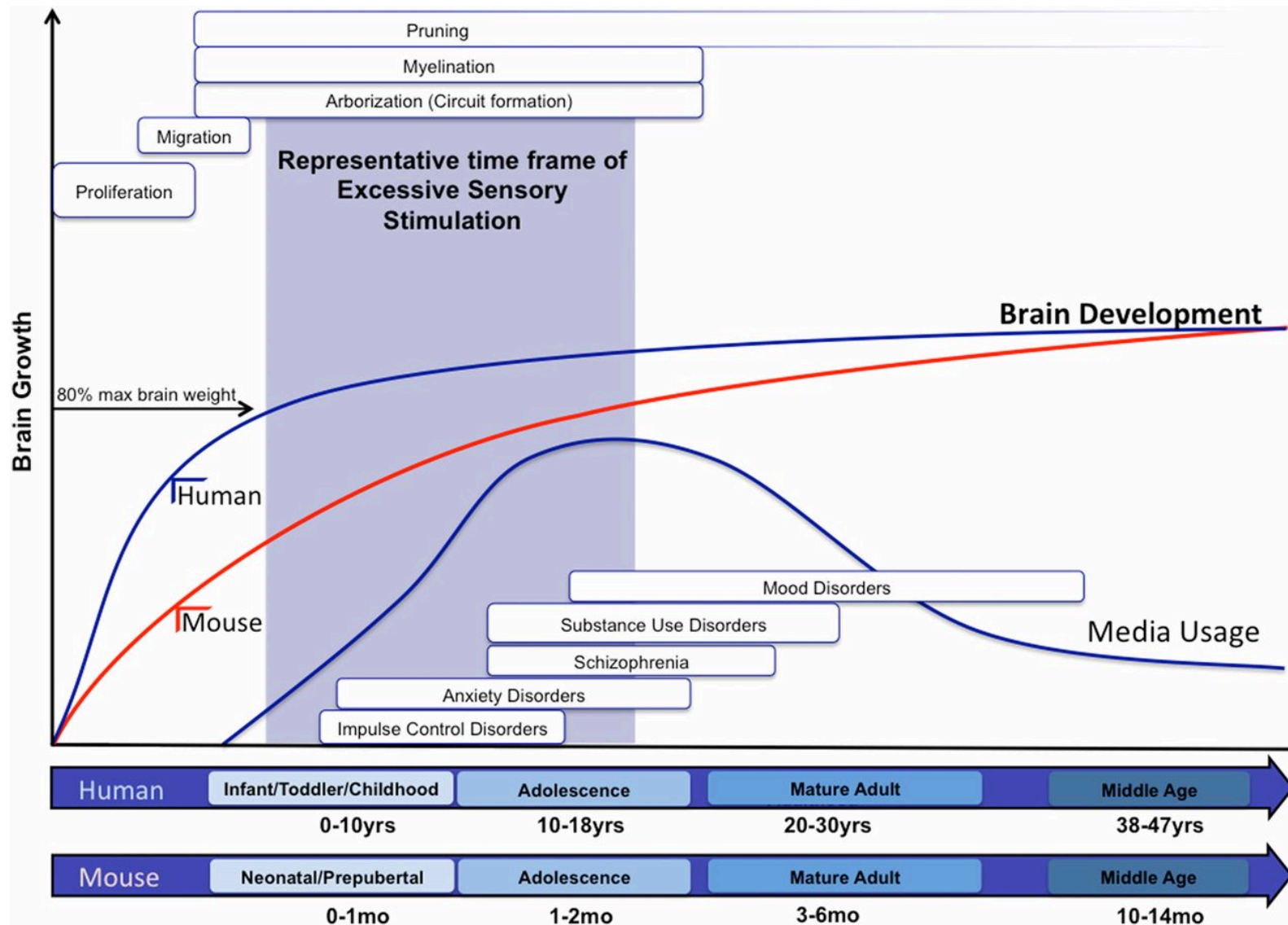
Potential Benefits/Opportunities

- Most “educational” apps and e-books do not have demonstrated learning effectiveness and include almost no input from developmental specialists or educators
 - Baby Einstein
- Some apps are helpful
 - See reviews on commonsensemedia.org

Health and Developmental Risks

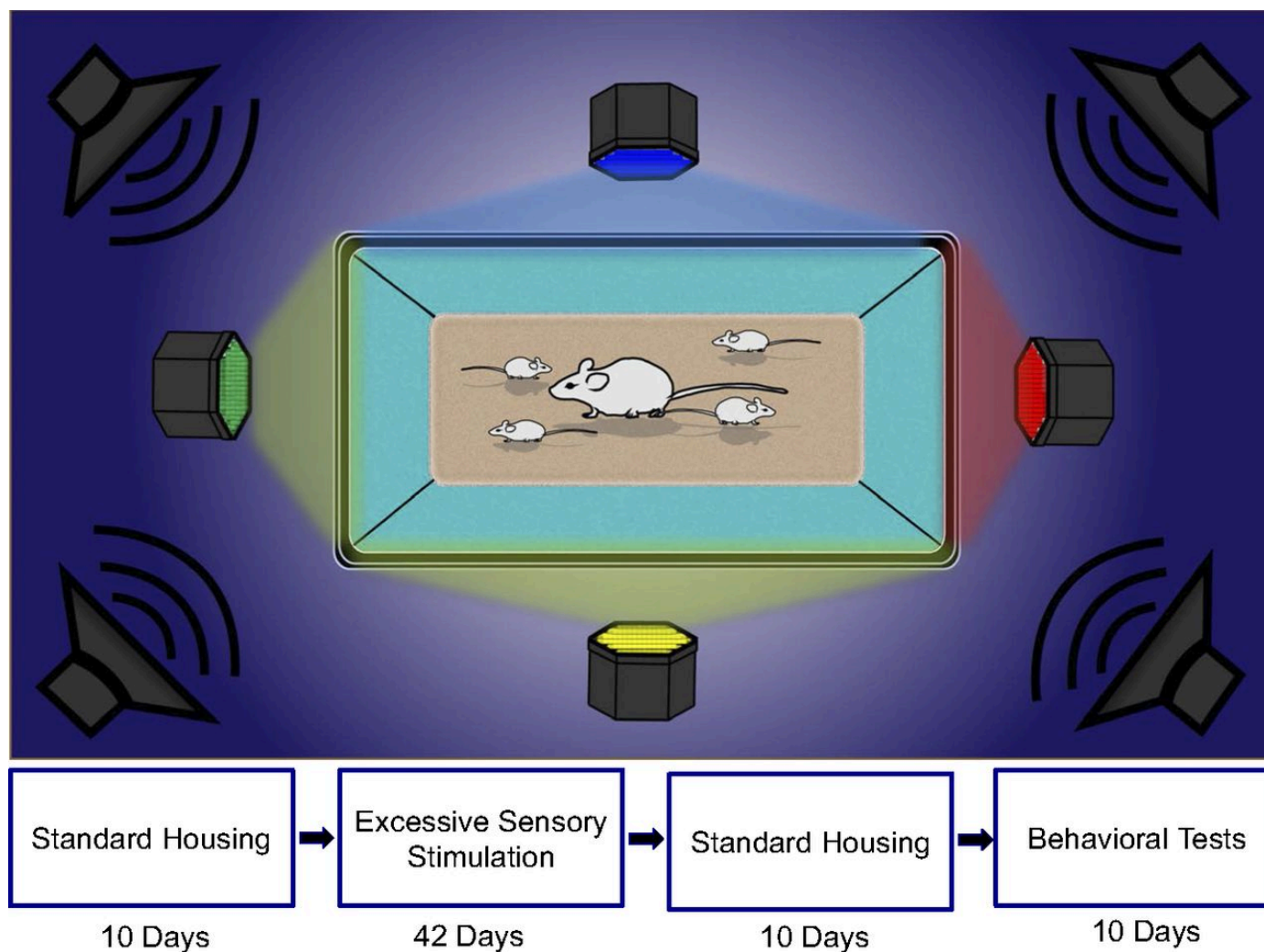
- Brain development is a highly complex process that occurs over the first 20 yrs of life
- The infant brain is very responsive to environmental stimuli
 - Early life adverse events
 - Maternal stress
 - Toxins
 - Nutrition
- Increasing evidence that many (most?) neurologic and psychiatric disorders have a developmental origin that is the result of prenatal and early postnatal disturbances in brain development
- What is the effect of excessive auditory and visual stimulation?

Schematic illustrating the hypothesized relationship between human brain development and exposure to ESS. Typical cortical development involves proliferation, migration, arborization, and myelination.



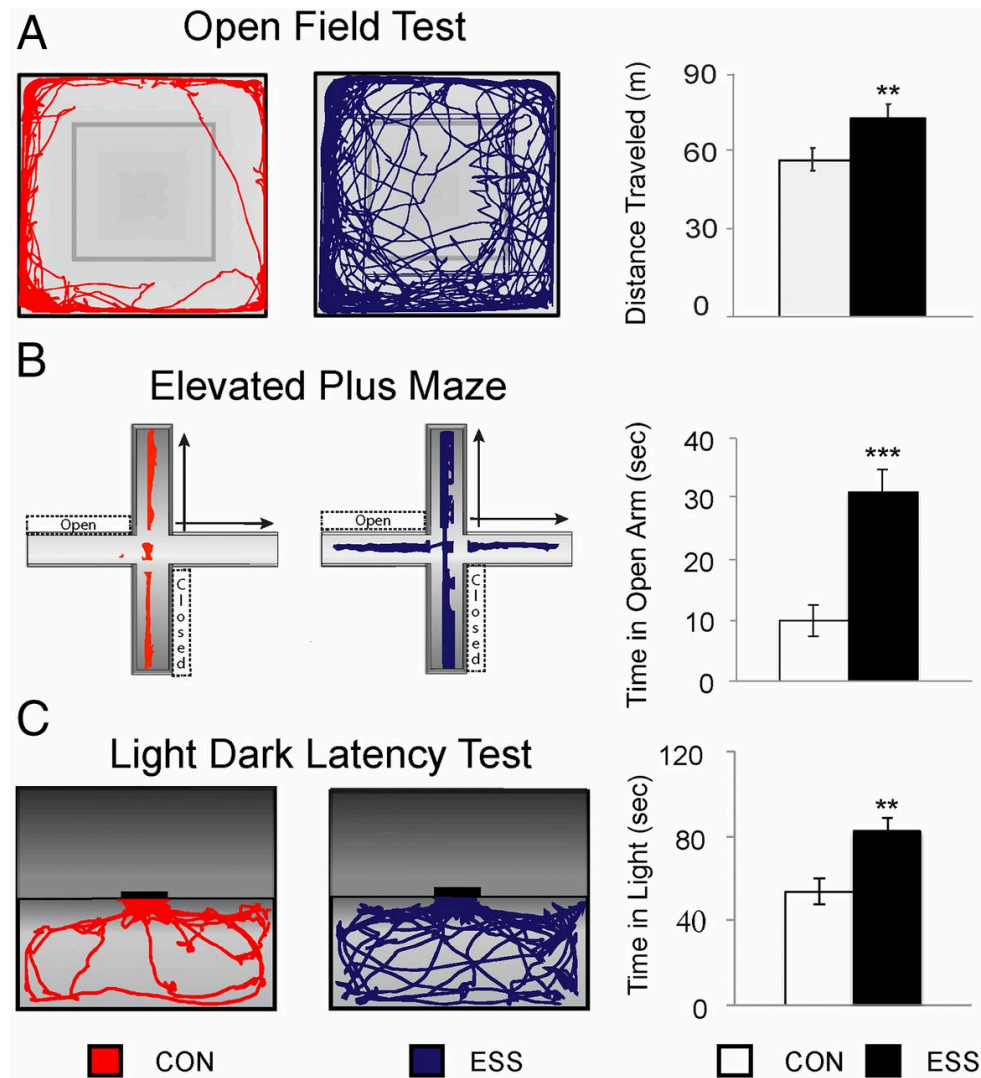
Dimitri A. Christakis et al. PNAS 2018;115:40:9851-9858

An illustration of the mouse excessive sensory stimulation (ESS) chamber and the experimental procedure.



Audio from the Cartoon Channel with photorhythmically modulated colored lights

This figure highlights the results of (A) the open-field test (OFT), (B) elevated plus maze (EPM), and (C) light/dark latency (LDL) tests.



Exposed mice are hyperkinetic (ADHD) and less risk averse

Health and Developmental Risks

- Excessive TV viewing in early childhood
 - Delays in cognition, language and social/emotional development
 - Causes
 - Inappropriate adult-oriented content
 - Displacement of parent-child interaction
 - Poorer family functioning
 - More likely to be seen in “difficult” children and lower income households with lower functioning children
- Strong associations between violent media content and child aggressive behavior
 - Reversible with changing media content

Health and Developmental Risks

- Sleep disturbances
 - Effects of light on sleep
 - Less sleep
- Obesity
 - Clear correlation between duration of media use and increasing BMI, metabolic syndrome, hypertension, etc
 - International study of 300,000 children and adolescents found watching 1 – 3 hrs/day of TV lead to a 27% increase in risk of obesity
 - Not due just to decreased physical activity but mostly due to increase caloric intake
 - Having TV in the bedroom is an independent risk factor for obesity

Health and Developmental Risks

- Media use and mental health
 - Mixed results
 - Some studies suggest a U-shaped relationship between media use and depression
 - Cyberbullying is especially harmful
 - Can happen anytime of the day (no safe space)
 - Perpetrators can remain anonymous
 - Rapidity with which information can spread online
 - Prevalence estimates: 10-40% of youth
 - Victims at higher risk of suicidal ideation and suicide
 - Media literacy efforts can reduce incidence and deleterious effects

Coincident trends in youth/young adults: depression, increased media use and decreased sleep

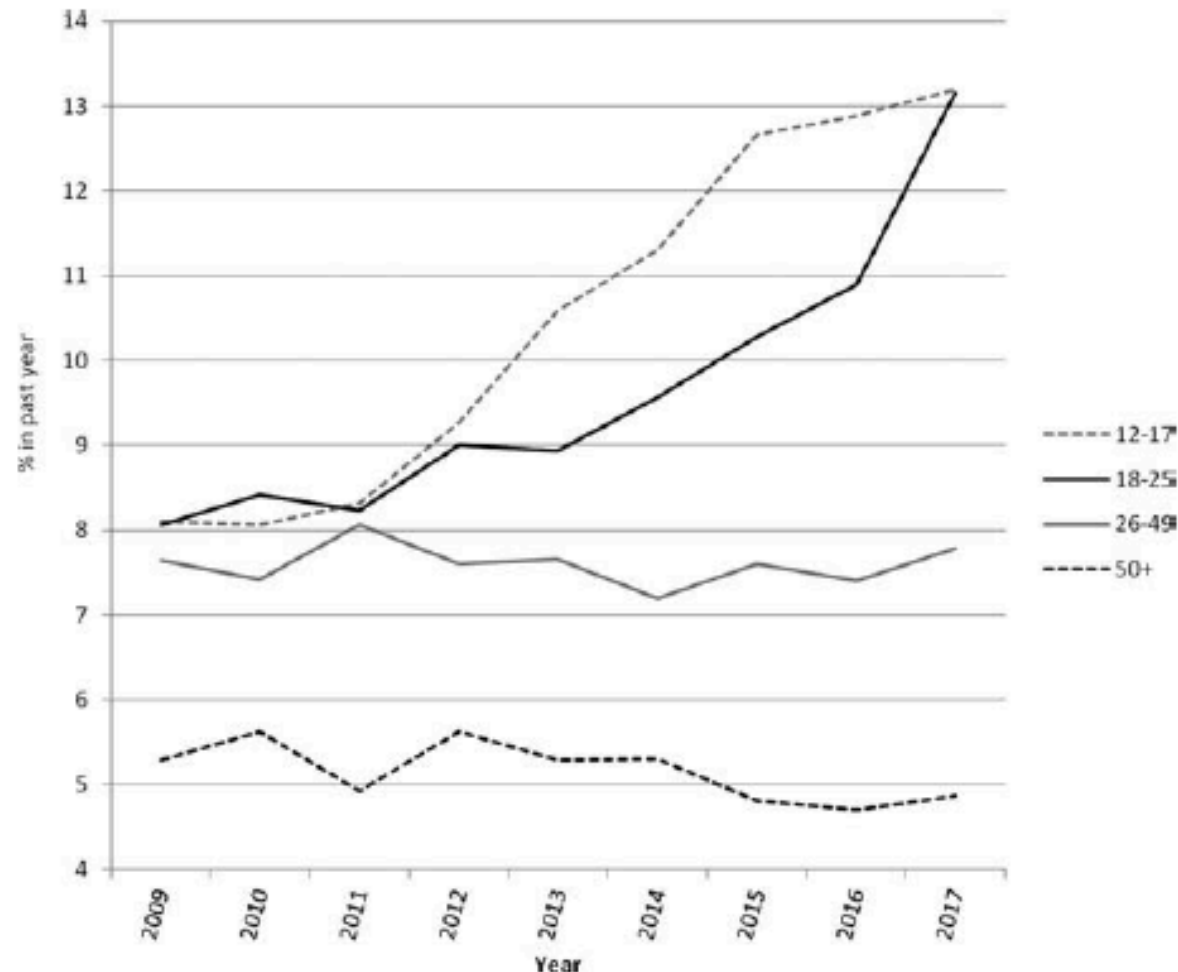
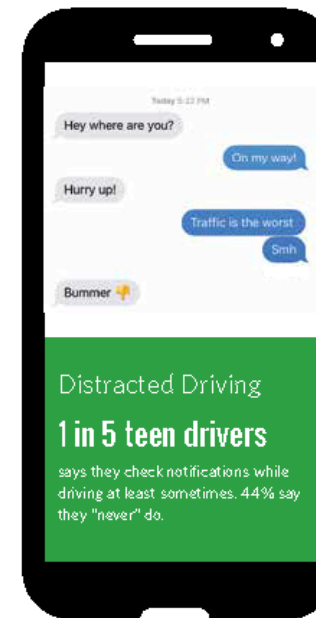
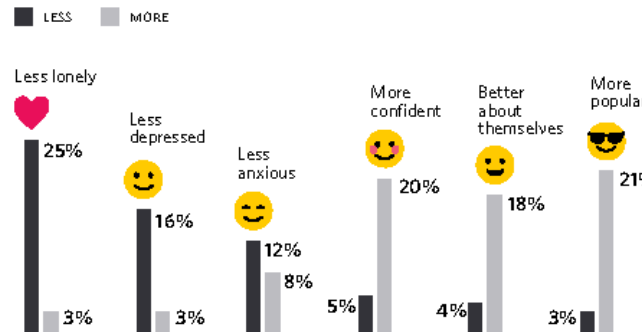


Figure 3. Percent with major depressive episode in the past 12 months, by age group, 2009–2017.

Twenge et al, J Abn Psy 2019

Teens are much more likely to say social media has a positive rather than a negative effect on how they feel.

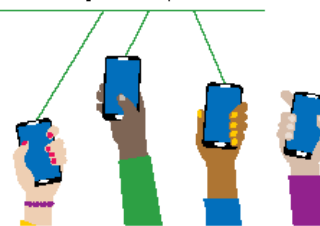
Social media users who say using social media makes them feel "more" or "less":



Teens think they're being manipulated.

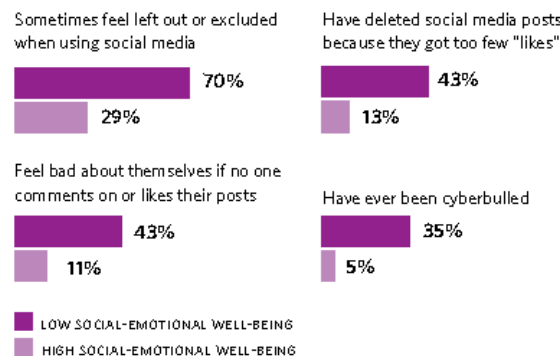
72%

Of teens believe that tech companies manipulate users to spend more time on their devices.



Teens with low social-emotional well-being experience more of the negative effects of social media than kids with high social-emotional well-being.

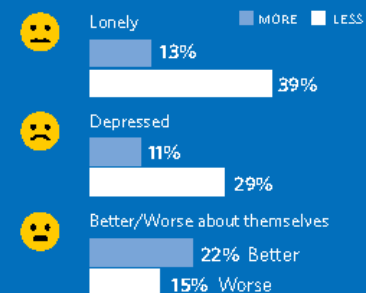
Percent of social media users who say they:



See Methodology section for definitions of the high, medium, and low SEWB groups.

Looking closer at teens with low social-emotional well-being

Percent who say using social media makes them feel:



METHODOLOGY: This report is based on a nationally representative survey of 1,148 13- to 17-year-olds in the United States. The survey was administered online by the research group GfK using their KnowledgePanel® from March 22, 2018, through April 10, 2018. Participants were recruited using address-based sampling methods. The margin of error for the full sample at a 95 percent confidence level is +/- 3.4 percent. The overall design effect for the survey is 1.4048.

What's a parent to do?

“All things are lawful for me,” but not all things are helpful
“All things are lawful for me,” but I will not be dominated
by anything. / *Cor 6:12*

- Examine your own digital media use habits
- Be a role model for your children!
- Develop a Family Media Use Plan
 - www.healthychildren.org/MediaUsePlan
- Avoid digital media use (except video chatting) in children < 18-24 months

What's a parent to do?

- Don't feel pressured to introduce technology early
- Children 2 – 5 yrs: limit screen use to 1 hour/day of high quality programming which you co-view and discuss with your child
- Avoid fast-paced programs, apps with lots of distracting content and violent content
- Turn off televisions and other devices with not in use
- Avoid using media as the sole way to calm your child
- Monitor children's media content and what apps are used/downloaded

What's a parent to do?

- Keep bedrooms, mealtimes and parent-child playtimes screen-free for both children and adults
 - Make regular use of “do not disturb” settings on phones
- No screens 1 hour before bedtime, remove devices from bedrooms before bedtime

Resources

- AAP: www.healthychildren.org/MediaUsePlan
- Common Sense Media: www.common sense media.org
- Sesame Street: www.sesamestreet.org
- PBS Kids: www.pbskids.org

<https://youtu.be/R7jar4KgKxs>